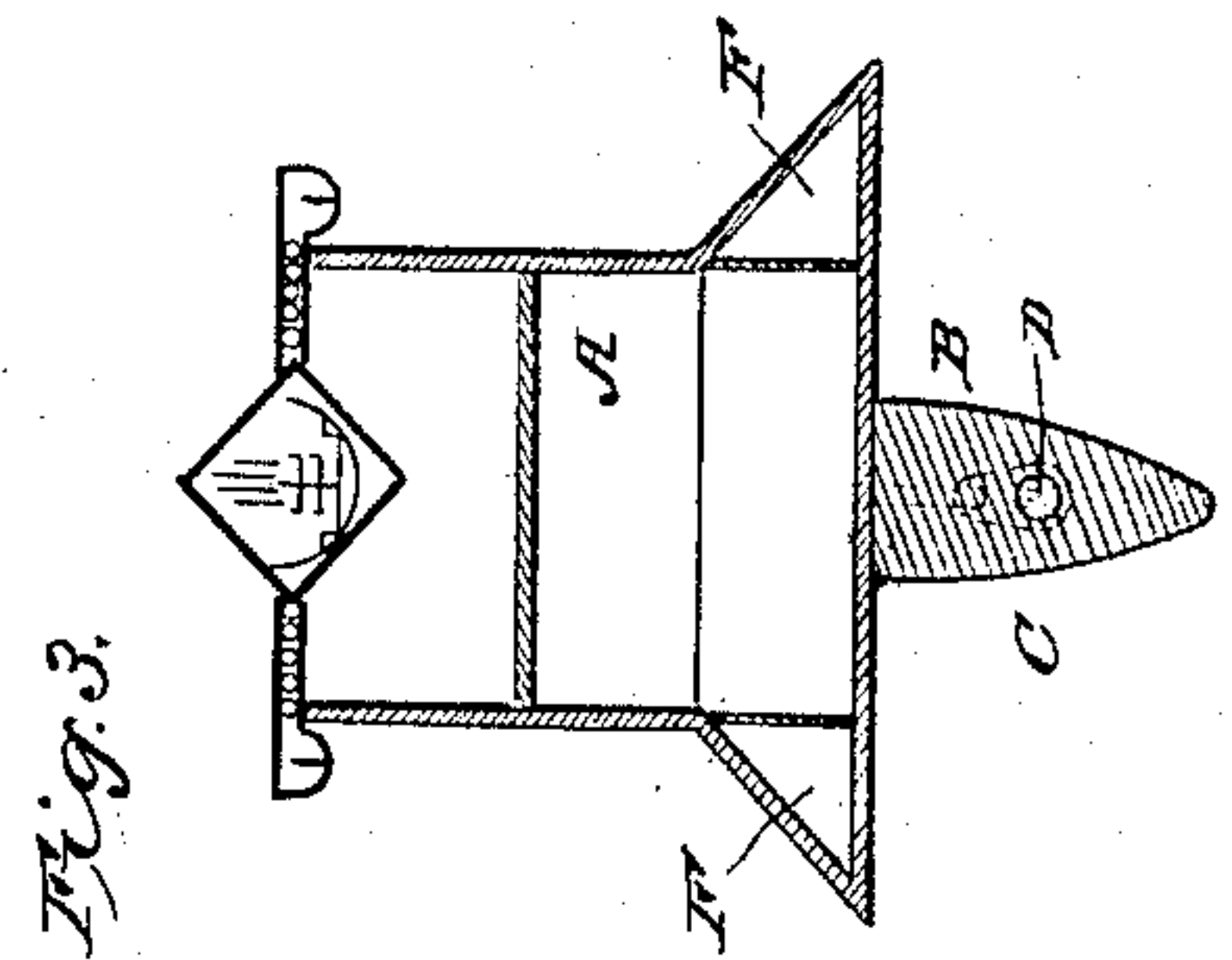
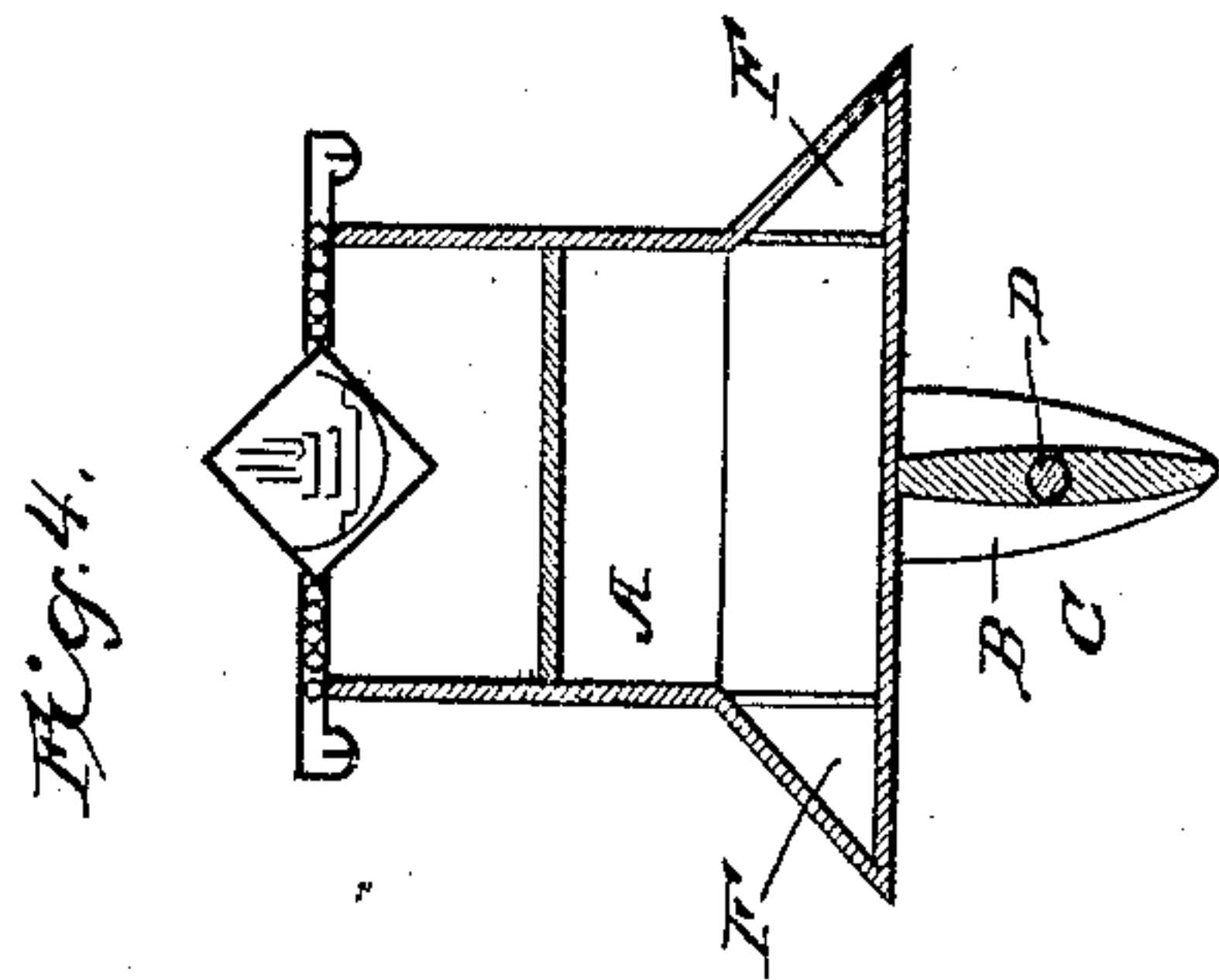
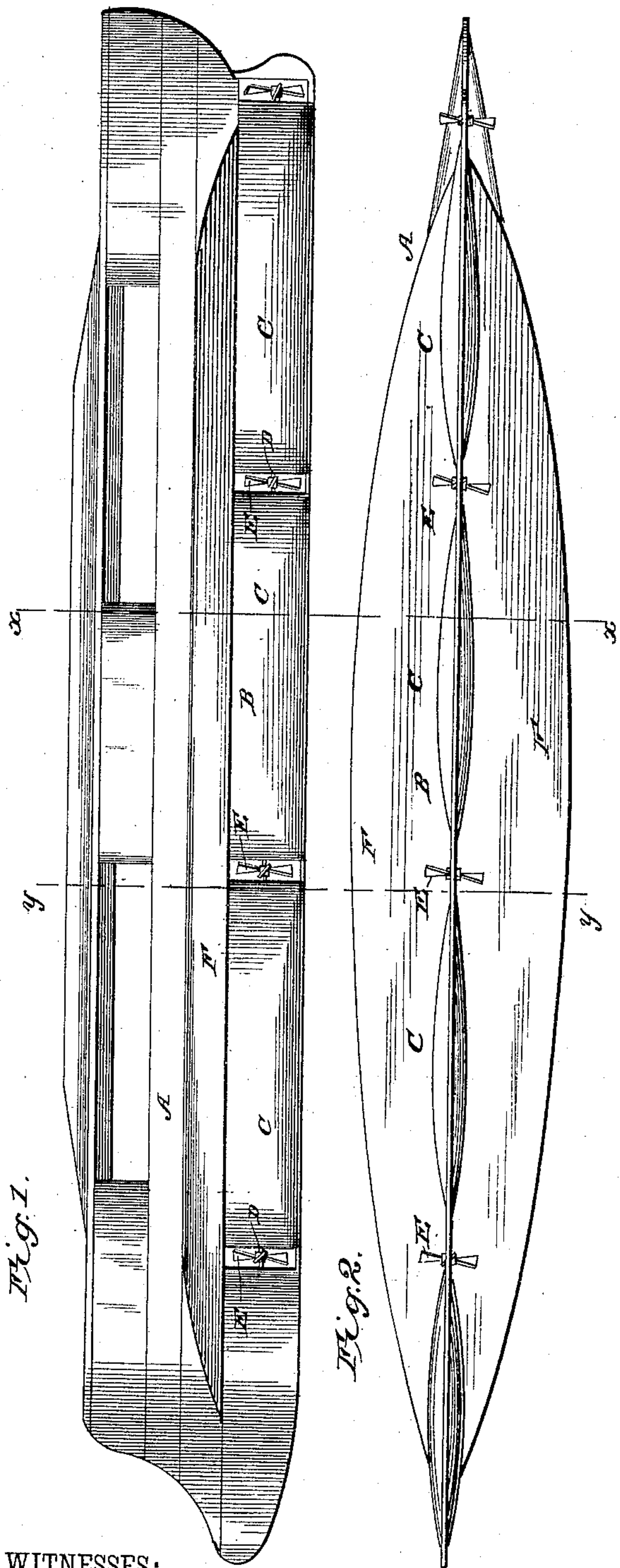


(No Model.)

E. SWINDELL.
CONSTRUCTION OF SHIPS.

No. 323,832.

Patented Aug. 4, 1885.



WITNESSES:

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UNITED STATES PATENT OFFICE.

EDWARD SWINDELL, OF APALACHICOLA, FLORIDA.

CONSTRUCTION OF SHIPS.

SPECIFICATION forming part of Letters Patent No. 323,832, dated August 4, 1885.

Application filed April 3, 1885. (No model.)

To all whom it may concern:

Be it known that I, EDWARD SWINDELL, a subject of the Queen of Great Britain, and a resident of Apalachicola, in the county of Franklin and State of Florida, have invented certain new and useful Improvements in Construction of Ships; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a side view of a vessel equipped with my improvements. Fig. 2 is a bottom view of the same. Fig. 3 is a transverse sectional view taken on the line *x x* in Figs. 1 and 2, and Fig. 4 is a transverse sectional view taken on the line *y y* in Figs. 1 and 2.

The same letters refer to the same parts in all the figures.

This invention relates to ships or sea-going vessels, and it has particular reference to the construction of the keel, and to the arrangement under the body of the vessel of a series of two or more propellers, which may be operated singly or in sets by means of separate and independent shafts, the objects of the invention being, first, to keep one or more of the propellers constantly under water; secondly, to increase the speed by the use of a larger number of propellers, possessing in the aggregate greater power than that of a single propeller; thirdly, to promote safety, inasmuch as each of the propellers will always serve as a reserve in case of any accident or injury to one or more of the remainder, and, finally, to provide a device which, in the construction and arrangement of details, shall possess superior advantages in point of simplicity, durability, and general efficiency.

With these ends in view the invention consists in the improved construction and arrangement of parts, which will be hereinafter fully described, and particularly pointed out in the claims.

In the drawings hereto annexed, A designates the hull or body of a vessel to which my improvements have been applied. B is the keel, which is composed of a series of sections, C C, made tapering at their front and

rear ends, and provided with longitudinal bearings for the shafts D, on which the screw-propellers E E are mounted, as shown, between the sections of the keel and in rear of the rear section. Usually two engines will be employed, arranged to drive separate shafts, D D, by means of cranks upon the latter; but with regard to the number of engines and shafts and their relative arrangement and method of operation, I would have it distinctly understood that I do not limit myself.

The hull of the vessel is provided with longitudinal laterally-extending compartments or bulk-heads having flat bottoms on a level with the bottom of the hull or vessel proper. These bulk-heads, which are denoted by letters F F, may be used as coal-bunks or for other storage purposes.

With regard to the construction of the keel, I would have it understood that the several sections composing the same may be connected at their lower edges in any suitable manner, so as to form, practically, a continuous keel. I would also have it understood that I reserve to myself the right to any and all changes or modifications in the construction and arrangement of details which may be resorted to without departing from the spirit of my invention.

The operation and advantages of this invention will be readily understood from the foregoing description, taken in connection with the drawings hereto annexed.

It will be seen that no matter what may be the position of the vessel, one or more of the propellers will be under water, and hence in effective or operative position. In case of injury to one of the engines, the remaining engine or engines will always be able to propel the vessel, and in case one or more of the propeller-screws should be disabled from any cause the remainder will be found efficient for the purpose of working the vessel.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. The combination of a hull having longitudinal laterally-extending bulk-heads, having their bottoms on a level with the bottom of the hull, with a keel composed of a series of sections tapering at both ends, as and for the purpose shown and set forth.

2. As an improvement in the construction of ships, the combination of the hull having longitudinal laterally-extending bulk-heads, the bottoms of which are on a level with the
5 bottom of the hull, the keel composed of a series of sections tapering at their front and rear ends, the propeller shaft or shafts journaled longitudinally in the said sections, and the propellers mounted on said shafts between
10 or at the rear ends of the keel-sections, sub-

stantially as and for the purpose herein set forth.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

EDWARD SWINDELL.

Witnesses:

WM. BAGGER,

AUGUST PETERSON.